

# IRA Rebates and PAYS<sup>®</sup> Copayments

*How integrating program delivery can achieve more equitable outcomes*

*Presented to Missouri Public Service Commission Virtual Workshop  
May 9, 2023*

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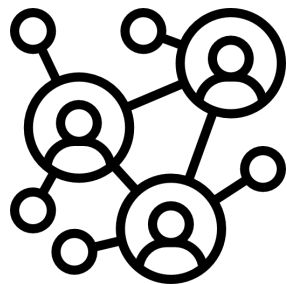


# CLEANENERGYWORKS

Clean Energy Works accelerates inclusive investments that open the clean energy economy to all.

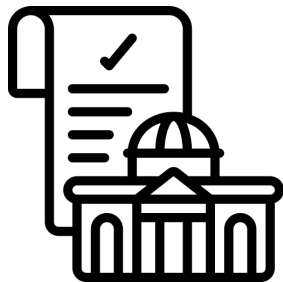
*Our world is not on a path to reach a goal of 100% clean energy for everyone.  
There is a viable model - **inclusive utility investments** -  
and it's not yet spreading fast enough to make a difference.*

## Clean Energy Works' Levers For Change



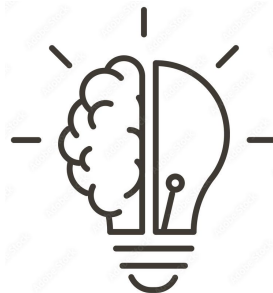
### Outreach & Engagement

Create and build embedded relationships in sector-specific networks to strengthen and support Champions



### Policy & Regulatory Support

Provide technical support to regulators, advocates, policy makers, and other stakeholders who are developing enabling federal and state policies and regulations



### Research

Rigorously pursue answers to questions that can accelerate policy approval and commercial adoption of inclusive utility investments



### Advising & Coaching

Provide capacity building support to utilities, partners, and allies that are engaging stakeholders in strategic geographies

*We primarily work with utility executives, regulators, legislators, community champions, and public interest advocates.*

*Those with whom we work describe us as "a team of connectors, catalysts, and innovators who are knowledgeable, optimistic, and solution-focused."*



# *Context*

## IRA + PAYS = MO Clean Energy Revolution

1. MO is uniquely positioned to blaze the trail to a clean energy future by braiding IRA rebates with Pay As You Save<sup>®</sup> (PAYS<sup>®</sup>) and Weatherization Assistance Programs
2. Don't believe the hype. On their own IRA rebates may be a recipe for public disappointment or anger.
3. PAYS has strong potential to accelerate and cut costs and risks of residential clean energy investment for all households
4. However, Missouri IOU's PAYS programs lack market leverage needed to deliver those benefits
5. The short burst of IRA rebate dollars could be sufficient to provide that leverage and transform PAYS into a major engine of MO clean energy future and economic renaissance



MO is uniquely positioned to blaze the trail to a clean energy future by braiding IRA rebates with Pay As You Save (and Weatherization Assistance) programs

# All MO Investor Owned Utilities have Active or Approved PAYS® Programs

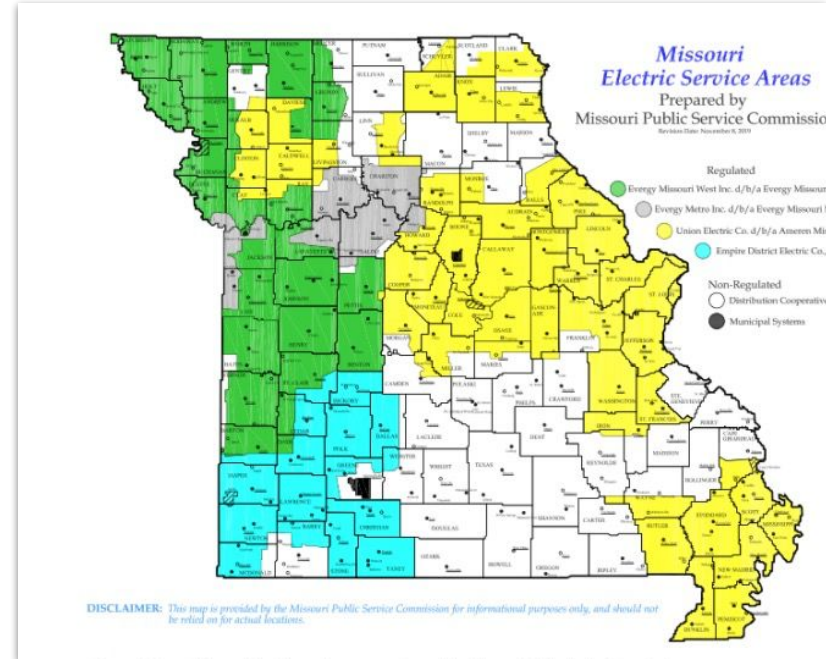
At present only Investor Owned Utilities (IOUs) in Missouri offer PAYS programs


- Ameren PAYS® (Active, Permanent, Co-delivered, \$10M)
- Evergy PAYS® (Active, Pilot, Co-delivered, \$ 7M)
- Spire PAYS® (Active, Permanent, Co-delivered, \$17M)
- Liberty PAYS® (Approved, Pilot, not yet contracted, \$0.5M)

~80% (2 million) of Missouri households receive electric or gas service from an investor owned utility

~20% of households (500K) do not currently have access to a utility offering a PAYS program

\*EEtility is currently the Program Operator for all contracted programs which facilitates co-delivery



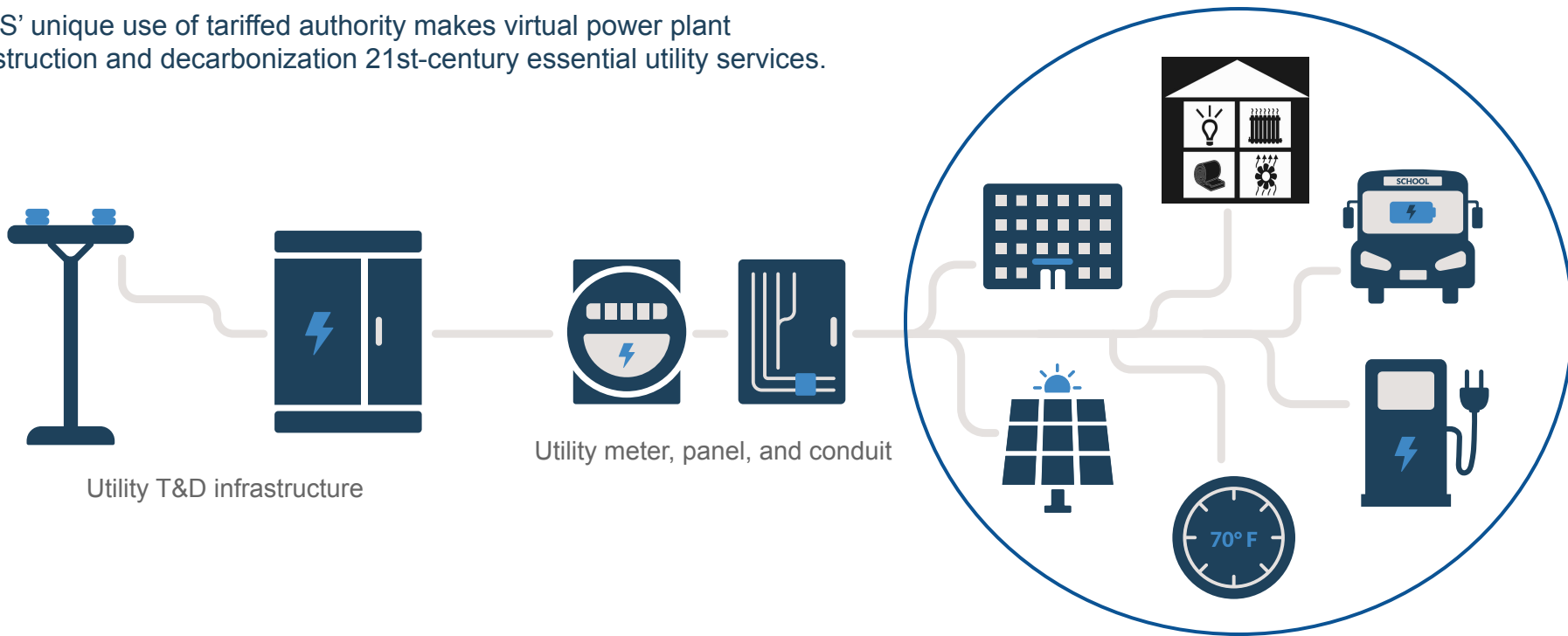


PAYS has strong potential to accelerate and cut costs and risks of residential clean energy investment for all households



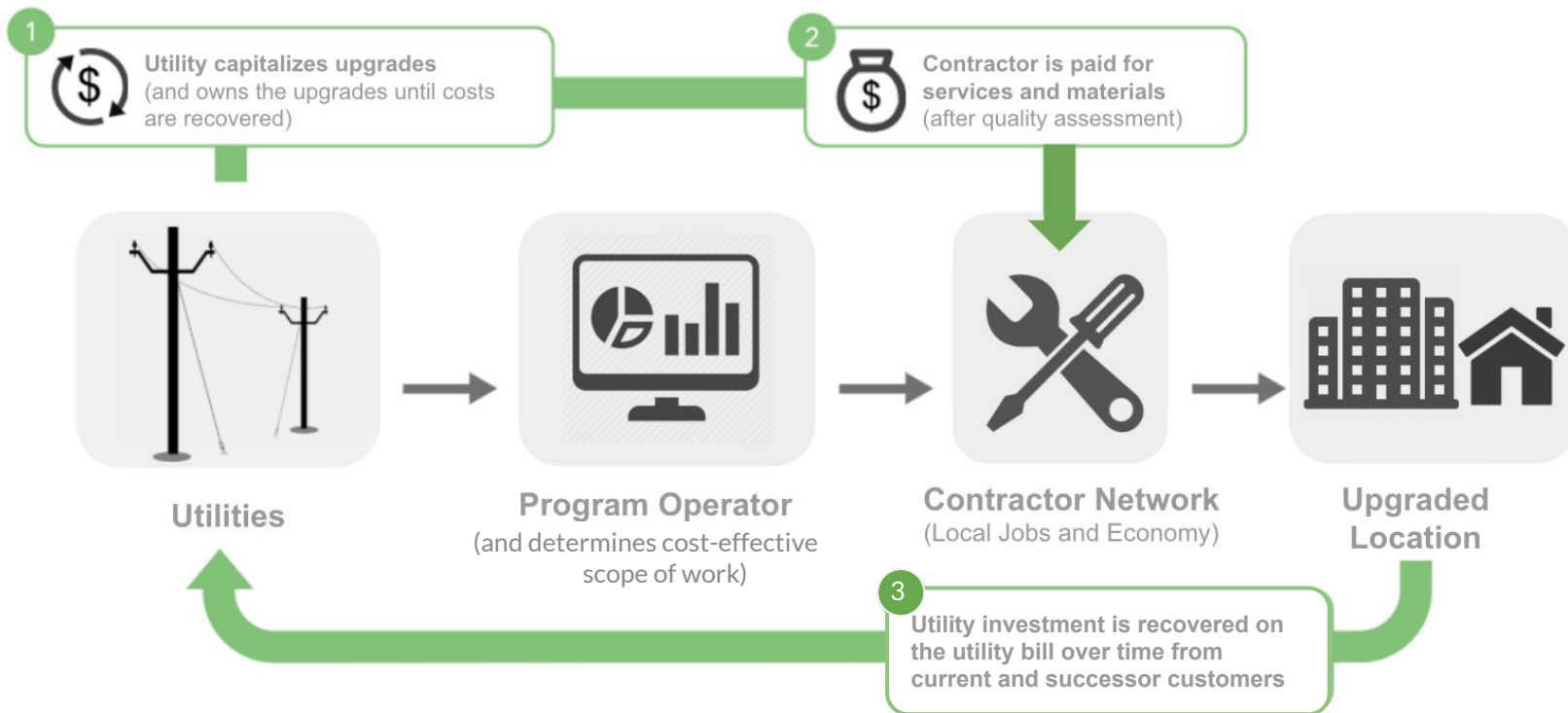
# PAYS<sup>®\*</sup> enables utilities to make site-specific investments in a range of efficiency and clean energy technologies on the customer side of the meter

PAYS' unique use of tariffed authority makes virtual power plant construction and decarbonization 21st-century essential utility services.

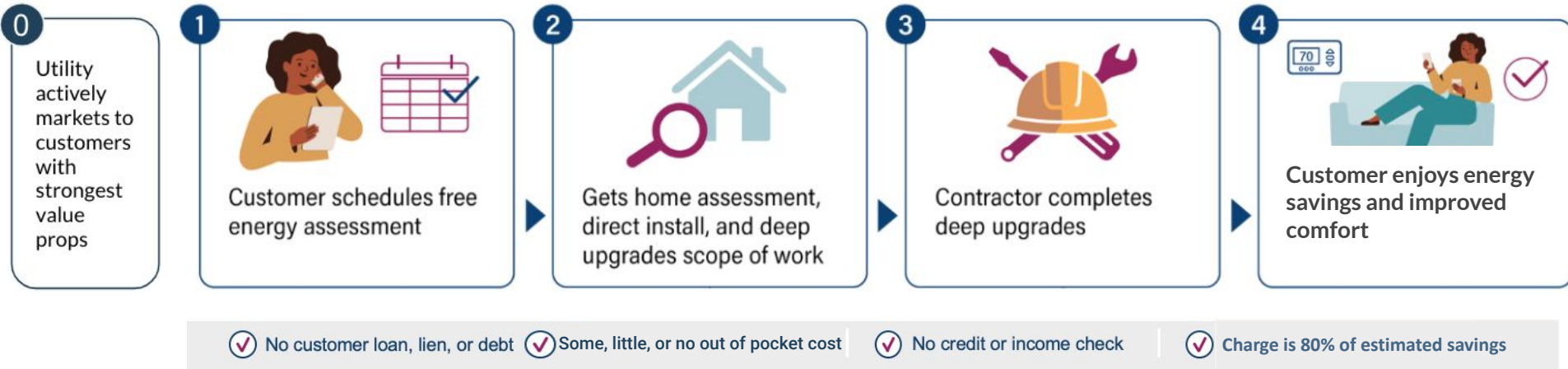


\*Also known as inclusive utility investment

## Utility Perspective: With inclusive utility investment / PAYS<sup>®</sup>, investment dollars flow from the utility to the contractor and are recovered as a fixed charge on the utility bill



# Customer Perspective: A stress-free journey, insulated from high pressure contractor sales



Source: CEW modification of Slipstream graphic based on the original from LibertyHomes

# PAYS pioneered by electric cooperatives has demonstrated success many states

**\$50M** Invested  
as of 2021

**23** Utilities

**10** States

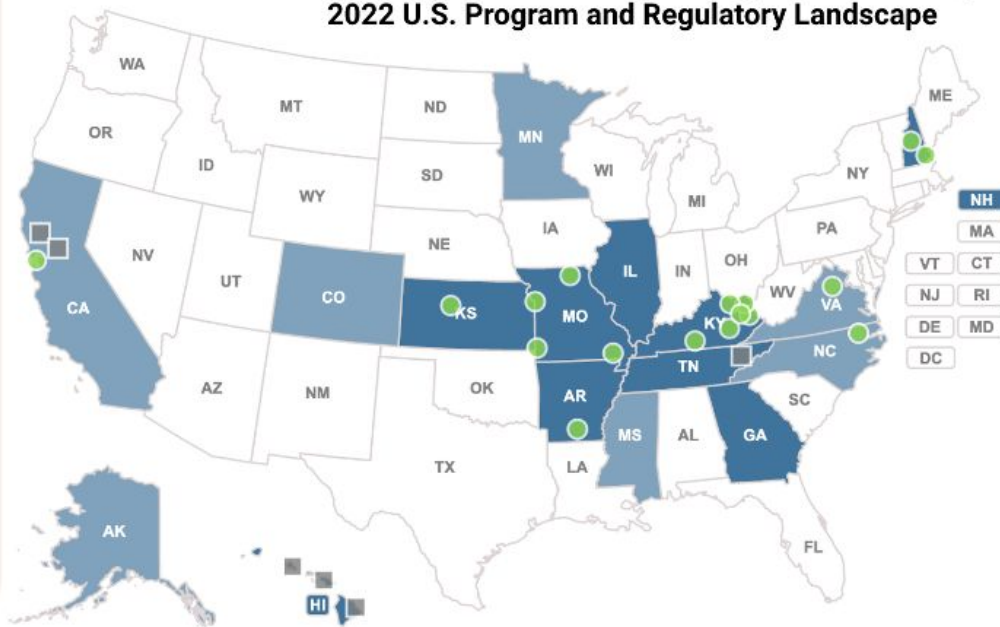
**4,500**  
Single family

**590**  
Multi-family

**700** MUSH

**\$170M** Committed  
through 2023

## Inclusive Utility Investment Using the Pay As You Save System: 2022 U.S. Program and Regulatory Landscape



- Utility Regulatory Commission has approved or been ordered to approve a PAYS Tariff
- State Legislature, Utility Regulatory Commission, or Investor Owned Utility is due diligencing PAYS
- Active Utility PAYS Programs
- Completed Utility PAYS Programs

All current programs, except in GA and VT (not shown) use the Pay As you Save® (PAYS®) System

Potential New IOU inclusive utility investment programs in 2023-2025

NC: Duke  
IL: ComEd, Ameren  
CA: PG&E, SCE

Source: LibertyHomes

Ferguson, Jill Grey, S. Bickel, H. Lachman, P.A. Cillo, H. Hummel. *Pay As You Save System of Inclusive Utility Investment for Building Efficiency Upgrades: Reported and Evaluated Field Experience in the United States*. 2022 ECEEE Summer Study Proceedings, 2022.

## PAYS pioneered by electric cooperatives has demonstrated success many states

	MACED (KY) <sup>1,2</sup>	Ouachita Electric Cooperative Corporation (AR) <sup>1,3</sup>	Roanoke Electric Cooperative (NC) <sup>1,3</sup>
Start Date	2011	2016	2017
Upgrade Package	Wx, HVAC	Wx, HVAC	DI, Wx, HVAC, DR
Cust. Reached	0.2%	6.2%	6%
Offer Acceptance Rate	78%	90% No copay 62% w/copay	90% No copay 66% w/copay
Average Upgrade Package Size (\$)	\$7,500	\$6,300	\$7,650
Average Monthly Energy Savings (\$)	\$43.25	\$55.33	\$59.08
Average Monthly Tariff (\$)	\$34.60	\$44.26	\$47.26
Charge-offs	<0.4%	Zero	<0.2%

<sup>1</sup> Energy Efficiency Institute, 2019 PAYS® Status Update

<sup>2</sup> MACED HowSmart KY Program Data

<sup>3</sup> EUtility SmartSheet database,

<sup>4</sup> Greg Leventis, Presentation: SEE Action Loan Performance—Findings For ACEEE Finance Forum May 25, 2021. Lawrence Berkeley National Laboratory

The background features several white, stylized circuit traces. These traces are composed of straight lines that turn at 90-degree angles, ending in small white circles. They are scattered across the page, with some forming vertical lines and others branching out horizontally.

## Resources to Learn More about PAYS<sup>®</sup>

# 2022: EPA launches a new resource hub for inclusive utility investment in conjunction with the launch of ENERGY STAR's building decarbonization upgrade program



[www.energystar.gov/products/inclusive\\_utility\\_investment](http://www.energystar.gov/products/inclusive_utility_investment)



## ENERGY STAR HOME UPGRADE



HEATING & COOLING



WATER HEATER



SMART THERMOSTAT



ATTIC INSULATION



WINDOWS



EV READY

Home » Energy Efficient Products » Inclusive Utility Investment

## Inclusive Utility Investment

### Expanding access to deep energy efficiency and electrification upgrades

Increasing access to deep energy efficiency and electrification retrofits across all households is critical to addressing energy inequity in the United States and solving the global climate crisis. Inclusive Utility Investment is one promising approach to expanding access to deep energy efficiency and electrification upgrades for all customers, including those that are often underserved by utility energy efficiency programs.

Inclusive Utility Investment is a proven (yet underutilized) model among Rural Electric Cooperatives, and one that is gaining interest and traction among Investor-Owned Utilities because it combines unique attributes, some of which follow:

- It enables utilities to make site-specific investments in home energy upgrades with site-specific cost recovery,
- It can pay for 100% of energy upgrades estimated to produce immediate net savings,
- It is not a loan program, and all customers are eligible regardless of income, credit standing or status as a homeowner or renter,
- Cost recovery is achieved through a tariffed charge on the utility bill tied to the utility meter rather than an individual, and
- Successor customers at an upgraded site are notified that the cost recovery charge applies automatically to the bill until the utility's costs are recovered.

## 2021 ENERGY STAR Products Partner Meeting



## Additional Resources

### Missouri IOU PAYS® Websites and Related Resources

- Evergy PAYS® program [FAQ](#)
- [Ameren PAYS® program](#)
- [Spire PAYS® program](#)

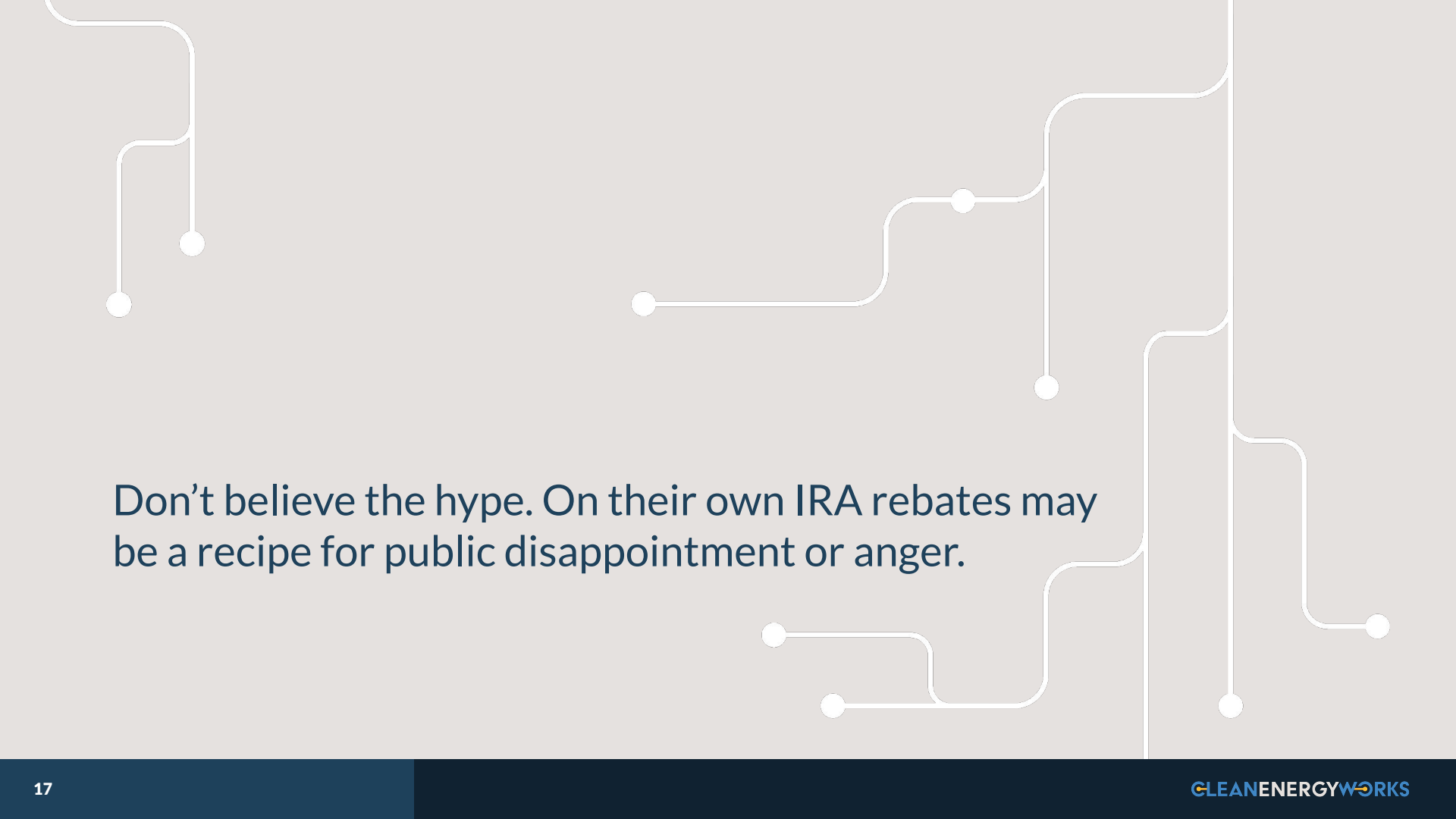
### Recent Research Papers

- [Reported and Evaluated Field Experience from Pay As You Save® Building Efficiency Upgrades](#) (Jill Ferguson, Stephen Bickel, Harlan Lachman, Paul A. Cillo, and Holmes Hummel)
- [Inclusive Financial Solutions Are Imperative to Meet 100% Targets](#) (Holmes Hummel, Jill Ferguson, and Stephen Bickel)
- [Inclusive Utility Investment in Action: Utility Value of a Pay As You Save® Energy Efficiency Program](#) (Stephen Bickel, Jill Ferguson, and Daniel Kauffman)
- [Customer outcomes in Pay-As-You-Save programs](#) (Jeff Deason, Sean Murphy, and Greg Leventis, LBNL)

### Other PAYS® Resources

- [Applying the PAYS® System to On-Site Solar to Expand Access for All](#) (Clean Energy Works webpage). This includes links to 3 report(s) prepared for DOE.
- Tools for utilities to use: [Modeling Inclusive Utility Investments in On-Site Solar](#)
- [EPA ENERGY STAR Inclusive Utility Investment webpage](#). Posted April 2022, last revised June 2022.
- [“Bridging the Gap: Ensuring Access to Energy Efficiency For All.”](#) Keynote Presentation, ACEEE Finance Forum by Dr. Tony Reams, Deputy Director for Energy Justice at U.S. Department of Energy (DOE) May 2022 (~15 minutes)
- [States are in the Driver's Seat: How the IRA can Pave the Way to Greater Energy Equity.](#) CPUC Commissioner Darcie L. Hauck presentation at the NARUC Annual Meeting November 15, 2022.





Don't believe the hype. On their own IRA rebates may be a recipe for public disappointment or anger.

# Given some of the coverage, you might think *everyone* is going to get a generous IRA rebate to upgrade their home

## REBATES

### HIGH EFFICIENCY ELECTRIFIED HOMES

Single-Family and Multifamily rebates available for families at or below 150% AMI (Area Median Income).

MAX REBATE **\$14,000**

## TAX CREDITS

### 25D Clean Energy Tax Credit

2022-2032 = 30%

2033 = 26%

2034 = 22%

**30**

### 25C Energy Efficient Home

## Your Personalized Incentives

UPFRONT DISCOUNTS ⓘ

**\$14,000**

Covers up to 100% of costs

AVAILABLE TAX CREDITS ⓘ

**\$4,100**

ESTIMATED SAVINGS PER YEAR ⓘ

**\$1,050**

**MODERATE-INCOME: 80-150% AMI**

% costs covered (Including Installation)

**50%**

## OVERALL INCENTIVES

Max Consumer Rebate **\$14,000**

Max Contractor Rebate **\$500**

## REBATES FOR QUALIFIED ELECTRIFICATION PROJECTS

Heat Pump HVAC **\$8,000**

Heat Pump Water Heater **\$1,750**

Electric Stove/Cooktop **\$840**

## IRA Heat Pump Rebates & Tax Credits



**Total Incentives \$18,100** ⚡

Disclaimer: These values are estimates. The rebates may be implemented differently in each state, so we cannot guarantee final amounts, eligibility, or timeline. And without additional appropriations from Congress, the programs will end once their initial IRA funding is exhausted. Tax credits can only be used to offset your tax owed, which we estimate but do not know.

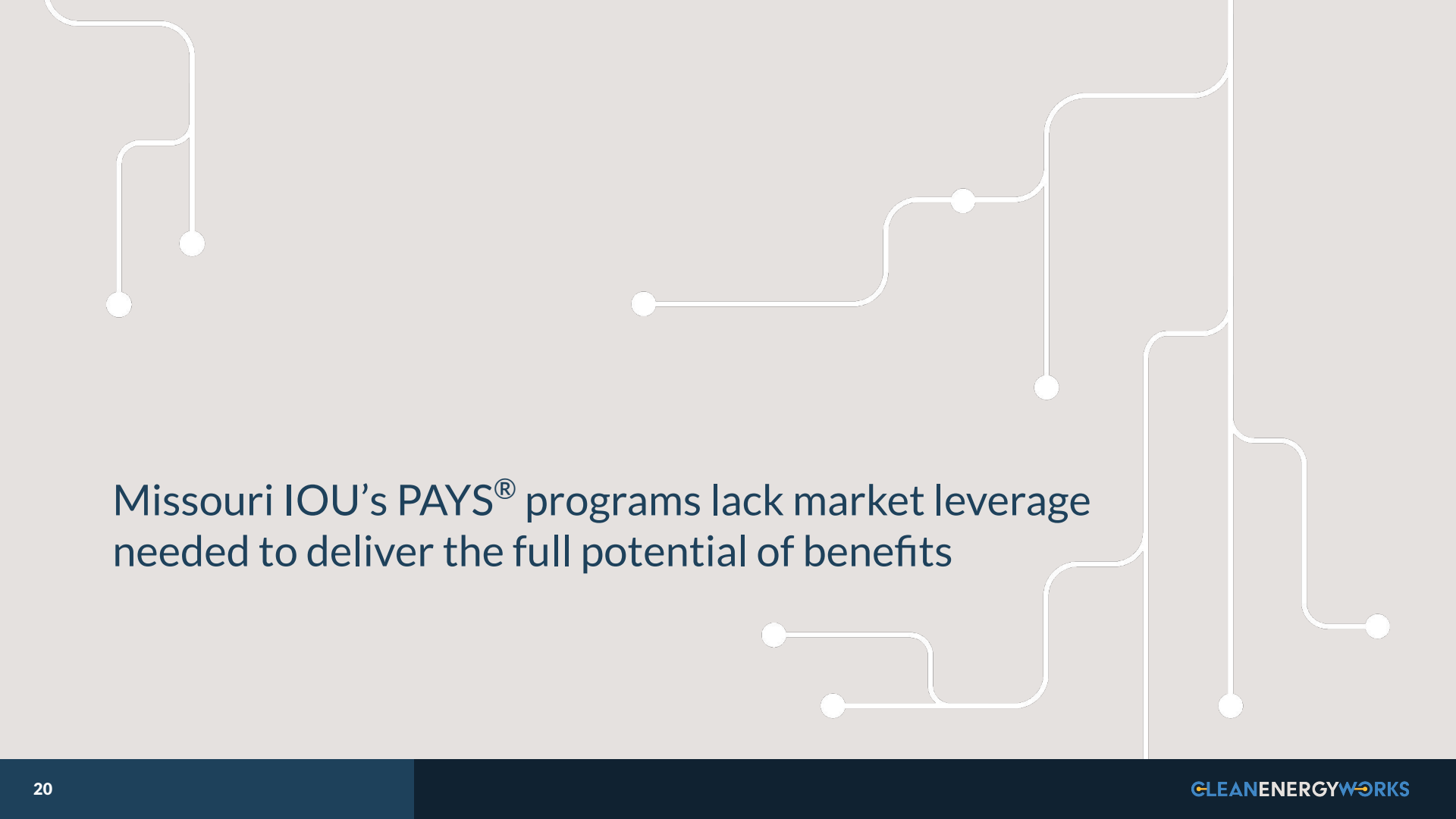
## High expectations and limited access are not a good combination

### Total dollars are less than they seem

<b>Total Rebates</b>	\$8.8B
<b>Missouri Share</b>	\$150M
<b>For Households After Admin Fee (20%)</b>	\$120M
<b>Average \$/Household</b>	\$48

### Not a lot of people are going to get a rebate

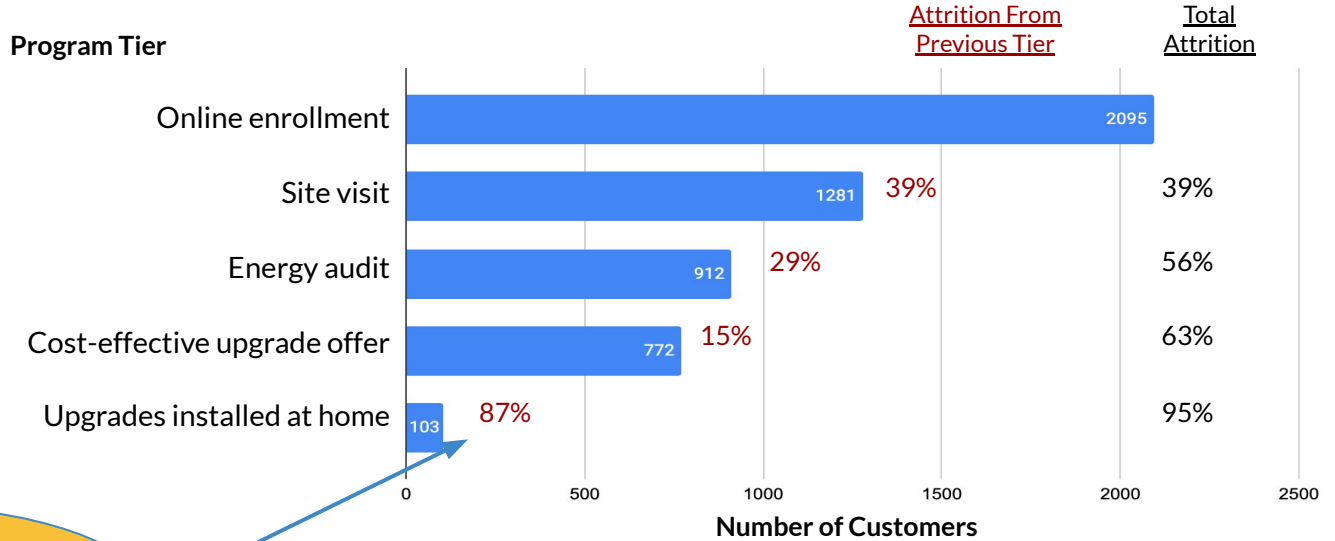
	Average Rebate	Households	Share of HH	Frequency
<b>Minimum</b>	\$500	242K	9.60%	Less than 1 in 10
<b>Probable</b>	\$2,000	60K	2.38%	Less than 1 in 40
<b>Gold Rush</b>		19.4K	0.77%	Less than 1 in 130
	HEAR	\$14,000	4.3K	
	HER	\$4,000	15.2K	



Missouri IOU's PAYS<sup>®</sup> programs lack market leverage  
needed to deliver the full potential of benefits

# Very low conversion rates are the primary cause of low total upgrade volumes

## Evergy PAYS® Program Pilot Results (Sept 27, 2021 - Sept 30, 2022)



**Conversion Rate = 13%**  
[Now 20-25%]

<p><b>Typical acceptance rates</b></p> <p>No upfront cost: 90%</p> <p>Copay &lt;\$2000 : 50%</p>	<p><b>2022 offer with HVAC</b></p> <p>Avg copay \$6156</p>
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# Very low conversion rates are the primary cause of low total upgrade volumes



## PAYS Overview

Participation rates, Barriers, LMI

### Participation Rates

- **2,095** Interested / Enrolled Customers
- **1,281** Benefited from Direct Installs
- **103** PAYS Tariffs / Customer Retrofits
  - 14 Retrofits in LMI zip codes
  - 1 Renter retrofit complete

### Barriers to Participation

#### Early-Stage Barriers:

- Customer Responsiveness (40%) – *drop off before Tier 1*
- Asbestos, Mold, Envelope/Structural Issues (25%) – *identified during Tier 1 so cannot proceed*

#### Post Easy Plan Delivery Barriers:

- Co-Pays
  - Easy Plans offered were declined due to Co-Pays (75%)
    - Customers that did proceed with a Co-Pay averaged around \$3,000, many financed by Contractors
  - Avg Co-Pay of HVAC installs was \$6,156
    - Cost of HVAC equipment upgrades is difficult to meet the required 20% PAYS rule in bill savings

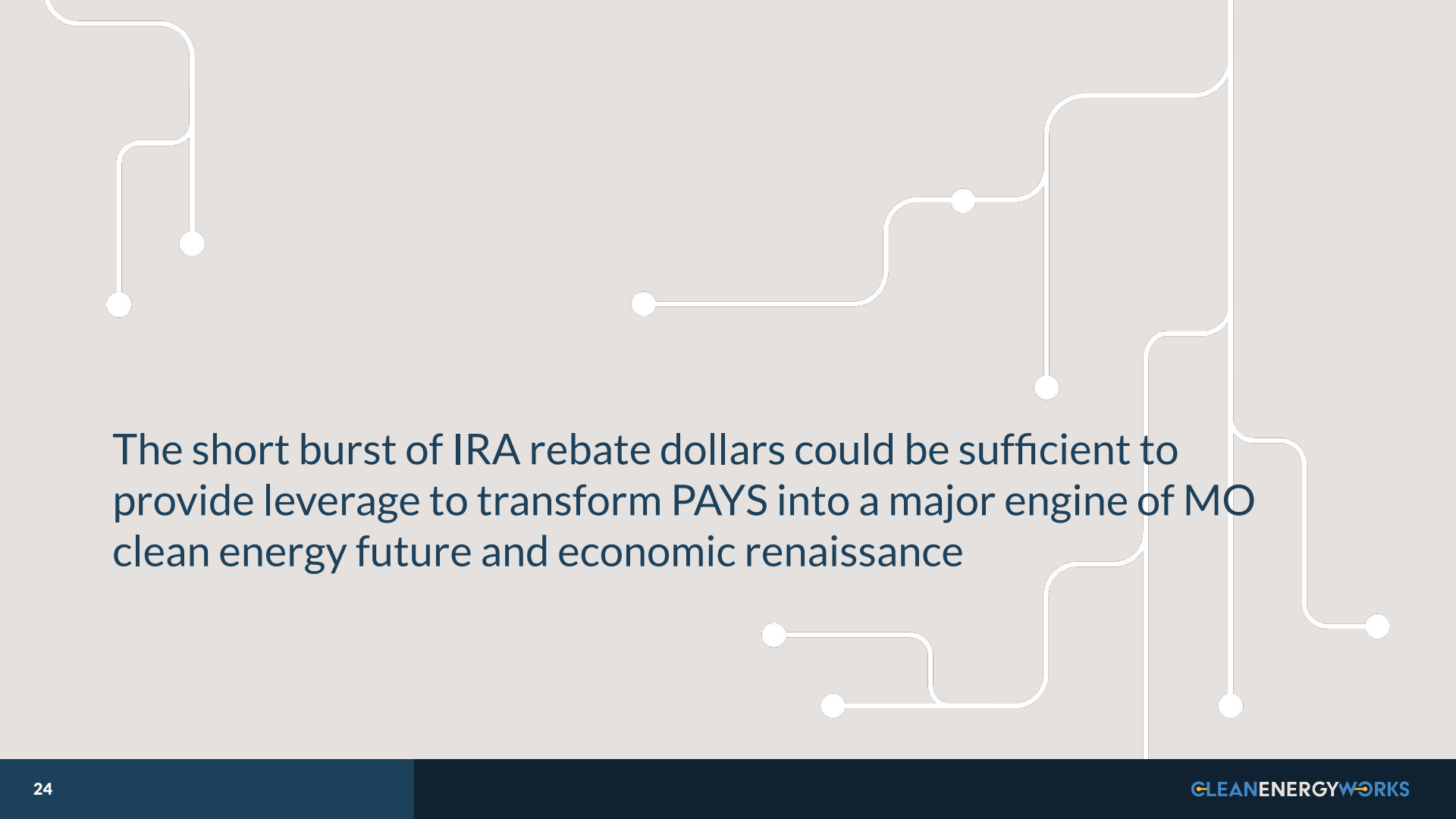
\*Data is through 09.30.22



Public

## Why are HVAC copays so high? Initial data suggests: excessive retail markup

	Size	Wholesale Equipment Price (single item)	Installed HVAC Costs for EUtility Managed PAYS Programs			Retail Mark-up Over Equipment Cost				Relative Size of MO Mark-Up Compared to AR/VA/NC
			AR/VA/NC	MO	AR/VA/NC		MO			
					\$	%	\$	%		
Furnace + AC 16 SEER 95 AFUE	2.5 Ton	\$ 5,000	\$ 6,800	\$ 8,126	\$ 1,800	36%	\$ 3,126	63%	74%	
	3 Ton	\$ 5,400	\$ 6,800	\$ 8,466	\$ 1,400	26%	\$ 3,066	57%	119%	
	3.5 Ton	\$ 6,000	\$ 7,200	\$ 9,223	\$ 1,200	20%	\$ 3,223	54%	169%	
HP 16 SEER 8.8 HSPF	2.5 Ton	\$ 3,900	\$ 5,900	\$ 7,755	\$ 2,000	51%	\$ 3,855	99%	93%	
	3 Ton	\$ 4,400	\$ 6,200	\$ 8,471	\$ 1,800	41%	\$ 4,071	93%	126%	
	3.5 Ton	\$ 5,000	\$ 6,800	\$ 9,373	\$ 1,800	36%	\$ 4,373	87%	143%	

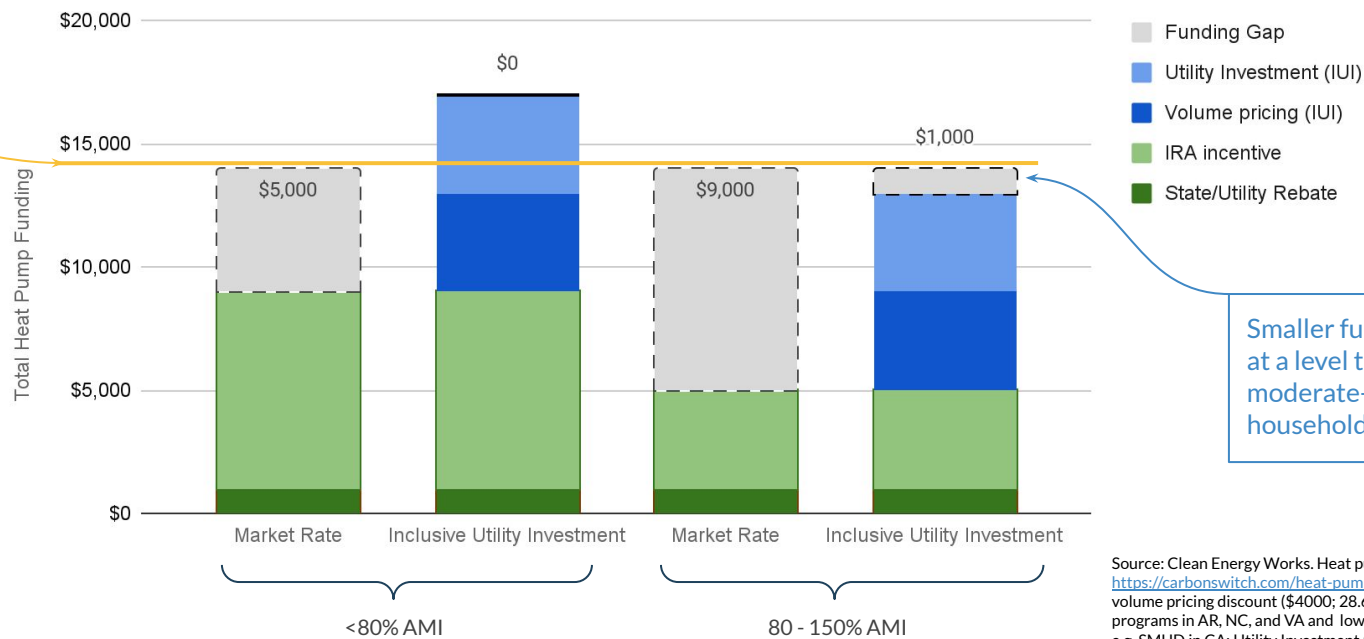


The short burst of IRA rebate dollars could be sufficient to provide leverage to transform PAYS into a major engine of MO clean energy future and economic renaissance



# PAYS programs cut costs two ways: utility investment and volume pricing

Undiscounted Cost of Installed Heat Pump (\$14k)



Smaller funding gap at a level that many moderate-income households can cover

Source: Clean Energy Works. Heat pump price (\$14,000) <https://carbonswitch.com/heat-pump-costs/>; Utility rebate (\$1000): Assumed; IUI volume pricing discount (\$4000; 28.6%): consistent with EUtility managed PAYS® programs in AR, NC, and VA and low income weatherization program discounts, e.g. SMUD in CA; Utility Investment (IUI) (\$4000) conservative estimate, for five programs studied by LBL average program investments ranged from \$6200-\$8200; Energy reported average

# Adding IRA rebate braiding to planned improvements will supercharge program volumes

## Measures to Reduce Copays by Reducing Installed Cost of 3 Ton HVAC Upgrade Using

	2023		2024
	Underway	Under Discussion	IRA Braiding
<b>Current Copay</b>	\$6,000	\$6,000	\$6,000
New HVAC Installer	-\$1,666		
Bulk Purchasing (Assume 25% discount) HVAC Installer (Assume 35% mark-up)		-\$2,999	-\$2,999
HER (modeled >35% EE savings)			-\$4,000
<b>New Copay</b>	<b>\$4,333</b>	<b>\$3,002</b>	<b>\$2</b>

**Expected Conversion Rate 90%**

# What happens if just 25% of MO Home Energy Rebates of \$4000 each are applied to PAYS upgrade offers?

Total Rebate Funds	\$120,000,000
25%	\$30,000,000
Rebate	\$4,000
Total upgrades	7,500
Utility investment/upgrade	\$3,700
Total utility investment	\$27,750,000
Annual AC and HP Sales in MO (est.)	180,000
PAYS upgrade share of sales in year	4%

Sufficient for program to determine price to volume offer for contractors (i.e., guarantee  $n$  installs at  $y$  price)

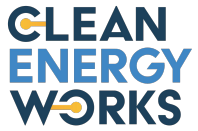
Will increase with new higher rates and new measures with benefit/cost ratios of  $>1.0$  (e.g., storm windows, PC, EVs, HP WH, plug load, etc.)

Will need to grow annually to maintain pricing power

# Recap

## IRA + PAYS = MO Clean Energy Revolution

1. MO is uniquely positioned to blaze the trail to a clean energy future by braiding IRA rebates with Pay As You Save<sup>®</sup> (PAYS<sup>®</sup>) and Weatherization Assistance Programs
2. Don't believe the hype. On their own IRA rebates may be a recipe for public disappointment or anger.
3. PAYS has strong potential to accelerate and cut costs and risks of residential clean energy investment for all households
4. However, Missouri IOU's PAYS programs lack market leverage needed to deliver those benefits
5. The short burst of IRA rebate dollars could be sufficient to provide that leverage and transform PAYS into a major engine of MO clean energy future and economic renaissance



Thank You



Backup slides

# Debt-based: Financing home upgrades with loans has low market penetration and categorically excludes many customers

## Observation on Loan Volume Data:

Maximum annual market penetration in a sample of 4 state-aided clean energy loan programs since inception is 0.1% of households in each state

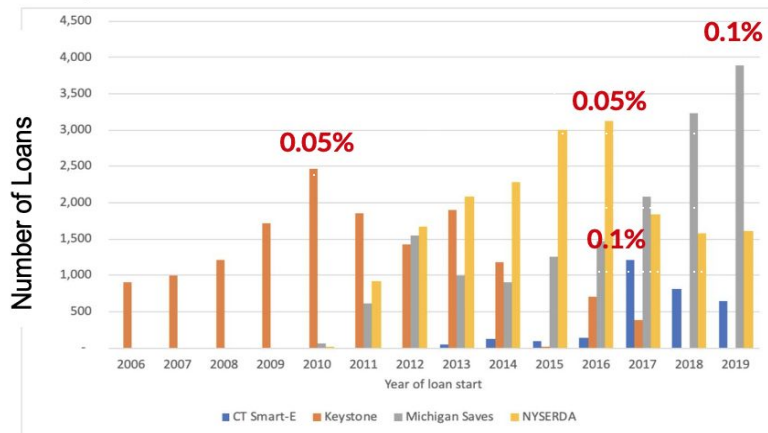
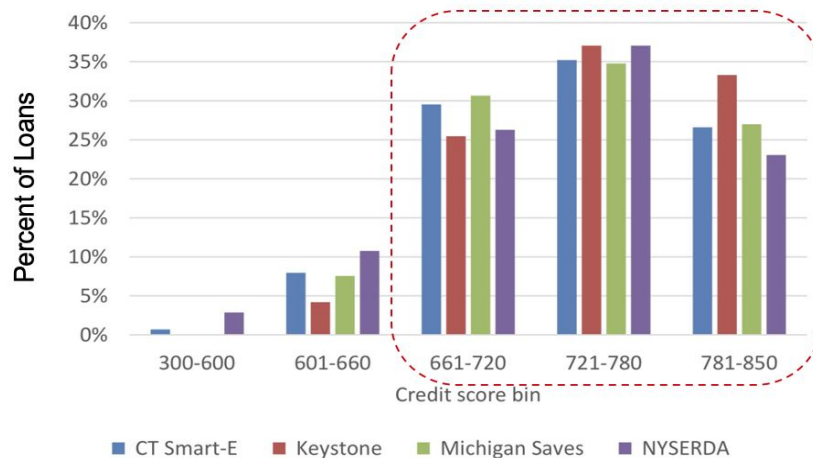


Figure 1. Loan volumes by program and vintage

## Observation on Borrower Data:

90% of borrowers in the 4 programs studied had credit scores that were prime, super prime, and beyond super-prime

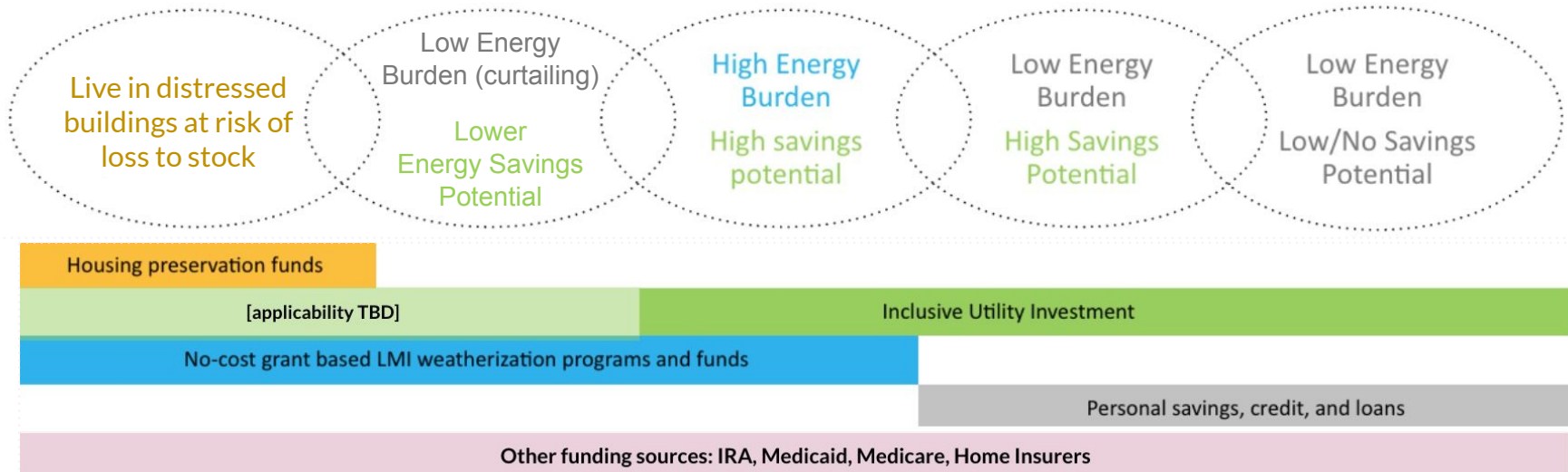


State and Local Energy Efficiency Action Network (SEE Action). (2021). Long-Term Performance of Energy Efficiency Loan Portfolios. Prepared by: Jeff Deason, Greg Leventis, and Sean Murphy of Lawrence Berkeley National Laboratory. [https://eta-publications.lbl.gov/sites/default/files/see\\_action\\_loan\\_performance\\_full\\_study\\_final.pdf](https://eta-publications.lbl.gov/sites/default/files/see_action_loan_performance_full_study_final.pdf)

Slide design Clean Energy Works enhanced by Jill Ferguson: CPUC Shultz Fellow | Doctoral Student, NSF GRFP Fellow, and Knight-Hennessy Scholar at Stanford University | Co-Founder of LibertyHome

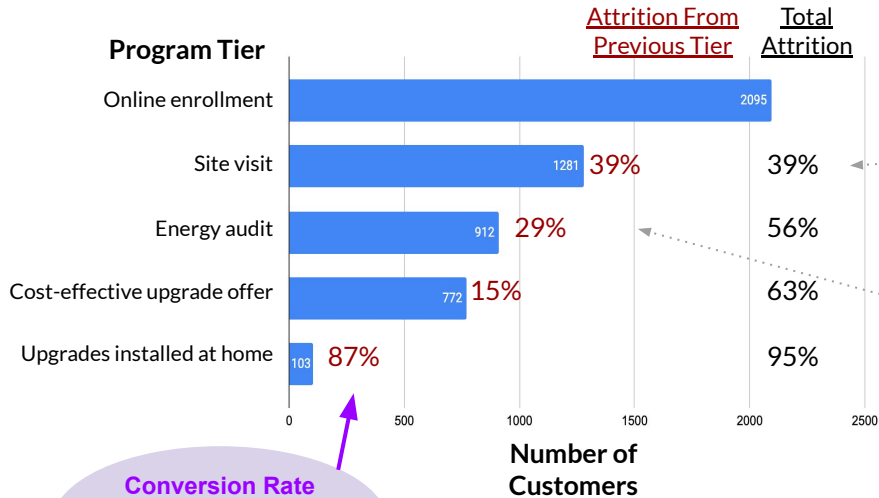


# To successfully upgrade *all* homes capital stacking will be essential



# The first residential IOU PAYS programs are producing critical learnings

Evergy PAYS® Program Pilot Results (Sept 27, 2021 - Sept 30, 2022)



Conversion Rate = 13%

[Now 20-25%]

**Participants love the program:** Overall participant satisfaction is very high (CSAT 8.1); those who get improvements are ecstatic (CSAT 9.5)

**Customer interest was overwhelming:** Evergy had to cease marketing after two of weeks, and is only just resuming

High loss rate for initial enrollees will be easily avoided in future by **adding self-scheduling to enrollment** website; moreover, the program still **provided benefits to a large number of customers:** 1,281 customers received a site visit and direct install of simple energy-saving measures

17% of attrition is due **structural and health and safety issues** at the site (typical for weatherization programs)

**PAYS upgrade offers see 90% acceptance rates when offers have no upfront cost and 50% when copayment is low (<\$2,000).** Inflated HVAC and Wx prices created high copays in Missouri, which dramatically depressed offer acceptance rates. Better pricing has been secured and additional steps are available to reduce copays to reasonable levels (including IRA rebates).

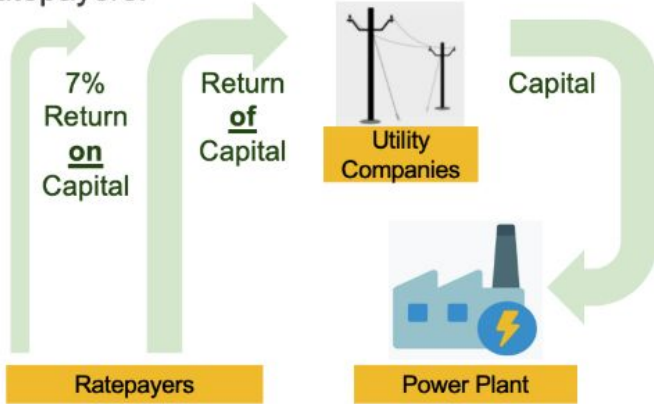
Program	Share of projects with a copay	Average copay (\$)	Median copay (\$)	Household income
Appalachian	52.6%	\$2027	\$2008	\$62,145
Kentucky	47.5%	\$2116	\$1250	\$51,633
Midwest	73.6%	\$2687	\$1882	\$73,285
Ouachita	31.3%	\$1765	\$1432	\$51,283
Roanoke	14.6%	\$1890	\$1725	\$54,047

Source: LBL

# PAYS has potential to offers equal return to the IOU with at lower cost to ratepayers

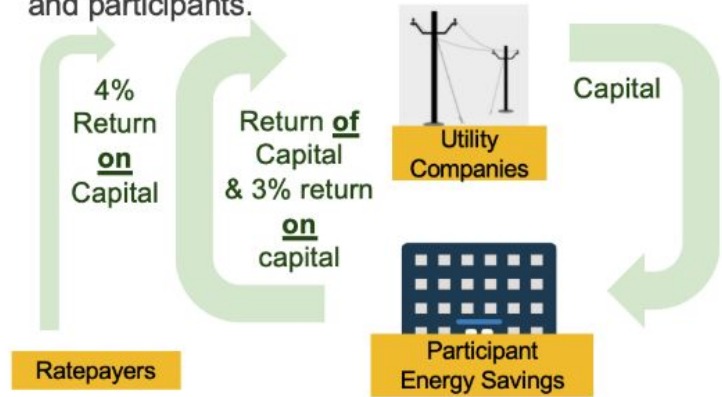
## Traditional Utility Industry

Commission approves utility to build a power plant and get return of that capital + a 7% return on that capital investment from ratepayers.

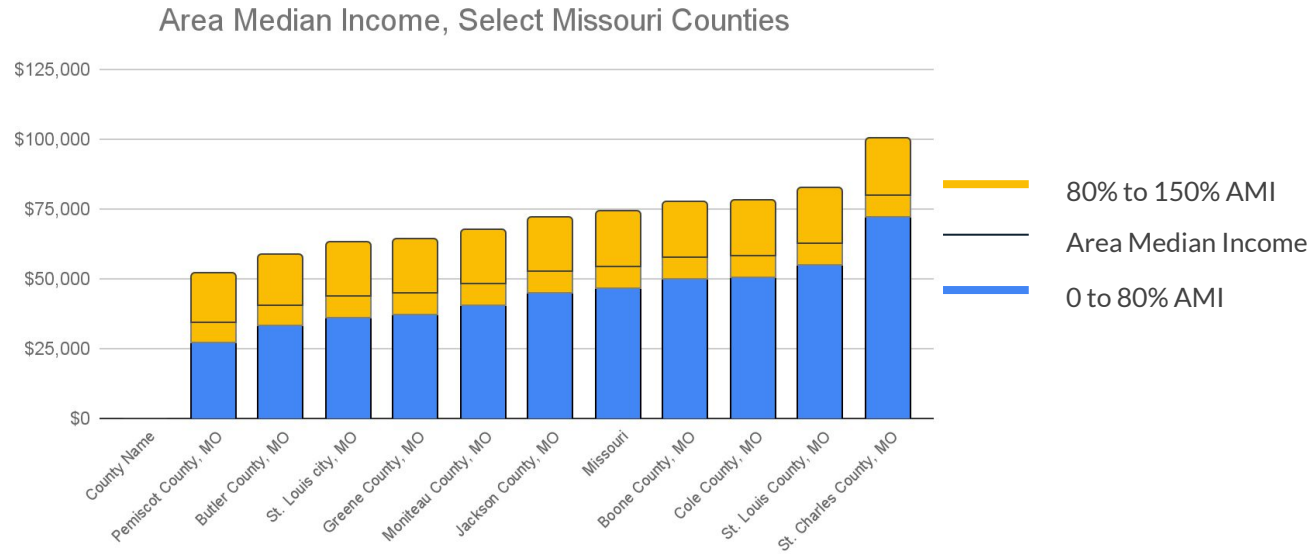


## Inclusive Utility Investment

Commission approves utility to invest in building energy upgrades and get return of that capital from the savings generated by the participants + a 7% return on that capital investment from both ratepayers and participants.



## The general impression



## Consumer outcomes in residential Pay-as-You-Save programs

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Jeff Deason, Sean Murphy, and Greg Leventis



*This work was funded by the U.S. Department of Energy Building Technologies Office, under Contract No. DE-AC02-05CH11231.*

ENERGY TECHNOLOGIES AREA | ENERGY ANALYSIS AND ENVIRONMENTAL IMPACTS DIVISION | ELECTRICITY MARKETS & POLICY

## Participant demographics

- No participant demographic data available
  - Used zip code-level American Community Survey data
- Participants are typically in areas with
  - Household incomes and education *below* national average
  - Unemployment rates *above* national average

Program	White-identifying population	Black-identifying population	Has bachelor's degree or higher	Unemployment rate	Household income
Appalachian	94.8%	3.7%	15.9%	6.2%	\$62,145
Kentucky	96.9%	3.1%	14.9%	7.8%	\$51,633
Midwest	95.1%	2.7%	35.0%	2.9%	\$73,285
Ouachita	60.1%	39.8%	14.9%	8.1%	\$51,283
Roanoke	46.1%	52.0%	15.3%	7.9%	\$54,047
National	75.3%	14.0%	32.1%	5.3%	\$88,607



# Project measures

- Projects are typically a mix of HVAC and weatherization
- Prevalence of LED lighting measures tracks with program model (PAYS® vs How\$mart)

Program	Share of projects that include measure			
	HVAC	Insulation	Air &/or duct sealing	LED lighting
Appalachian	80.0%	48.0%	73.3%	86.7%
Kentucky	92.0%	62.9%	84.7%	3.4%
Midwest	96.8%	43.1%	15.1%	0.0%
Ouachita	92.7%	0.0%	93.9%	95.0%
Roanoke	90.1%	32.1%	85.8%	90.1%





## Project costs and financing

- Capital costs are low and project costs are similar across programs
- Variation in *ex ante* dollar savings may reflect differences in climate, energy prices, building stock, and participant targeting

	Appalachian	Kentucky	Midwest	Ouachita	Roanoke
Total customer cost (tariffed amount plus copay)	\$7704	\$7323	\$9569	\$8247	\$6975
Ex ante expected monthly savings (\$)	\$62.44	\$47.23	\$50.24	\$74.11	\$78.19
Monthly payment (\$)	\$48.39	\$42.78	\$41.49	\$56.44	\$56.20
Cost of capital	2.0%	3.0%	3.2%	3.6%	3.0%



## Project costs and financing - expanded

	Appalachian	Kentucky	Midwest	Ouachita	Roanoke
Total customer cost (tariffed amount plus copay)	\$7704	\$7323	\$9569	\$8247	\$6975
Payment as share of <i>ex ante</i> expected savings	77.50%	76.20%	84.70%	76.80%	77.60%
Ex ante expected monthly savings (\$)	\$62.44	\$47.23	\$50.24	\$74.11	\$78.19
Monthly payment (\$)	\$48.39	\$42.78	\$41.49	\$56.44	\$56.20
Cost of capital	2.0%	3.0%	3.2%	3.6%	3.0%
Tariff term (months)	135.5	145.7	179.9	135.2	113.1



## Project copays

Program	Share of projects with a copay	Average copay (\$)	Median copay (\$)	Household income
Appalachian	52.6%	\$2027	\$2008	\$62,145
Kentucky	47.5%	\$2116	\$1250	\$51,633
Midwest	73.6%	\$2687	\$1882	\$73,285
Ouachita	31.3%	\$1765	\$1432	\$51,283
Roanoke	14.6%	\$1890	\$1725	\$54,047
			National	\$88,607

## Project copays - expanded

		Appalachian	Kentucky	Midwest	Ouachita	Roanoke
Projects without copay	Total tariffed amount (including cost of capital)	\$6269	\$6418	\$6391	\$7525	\$6469
	Total customer cost (tariffed amount plus copay)	\$6269	\$6418	\$6391	\$7525	\$6469
Projects with copay	Total tariffed amount (including cost of capital)	\$6932	\$6205	\$8145	\$8067	\$8036
	Total customer cost (tariffed amount plus copay)	\$8960	\$8322	\$10,832	\$9832	\$9925



# Many homes are barriered from receiving energy upgrades due to health and safety dangers and structural damage; these homes are also at risk of loss to the affordable housing stock

Location	Program type	Deferred for health and safety and/or structural problems
Connecticut <sup>1</sup>	Income Eligible, Wx	23%
Connecticut <sup>1</sup>	Market rate, HES	14%
Vermont <sup>2</sup>	Income Eligible, Wx	10%
Virginia <sup>2</sup>	Income Eligible, Wx	18%
Washington <sup>2</sup>	Income Eligible, Wx	>30%
Roanoke Electric Coop, NC <sup>3</sup>	Inclusive, PAYS (persistent poverty counties)	~55%
Georgia Power IQTBEE Pilot <sup>3</sup>	Income Eligible, UI	~80%
LaGrange, GA, SOUL <sup>1</sup>	Income Eligible, UI	~80%

(Wx=Weatherization, HES = Home Energy Solutions, PAYS= Pay As You Save®, UI = Utility Investment)

<sup>1</sup> Energy Futures Group. Presentation at the CT Weatherization Barriers Workshop, November 18, 2020

<sup>2</sup> E4TheFuture, [Weatherization Barriers Toolkit: How to Address Health and Safety Barriers with an Income-Eligible Focus](#). Presentation slide deck. June 6, 2022.

<sup>3</sup> Tammy Agard, CEO, EEtility, personal communication, June 1, 2022.

## Deferral causes

- Asbestos/vermiculite
- Mold
- Pests
- Roof damage
- Wall damage
- Cracked foundations

## Deferral costs

- VA average est. remediation cost: \$5,000-\$8,000
- CT average remediation cost: \$20,000

## ● Program Operator Perspective: Manage the process from soup to nuts

- **Volume pricing** for equipment and installation that significantly lower the cost of projects
- **Program operator expert staff conducts the energy audit**  
(not the contractors making the improvements)
- Uses field tested, 3rd party **validated energy estimation software, calibrated with 12 months of historical billing data** from each site, to develop the cost-effective scope of work (again, not the contractors)
- Post upgrade, **100% real-time remote quality assurance** via geocoded time-stamped photographs before payment is released to contractors that install the upgrades
- **Monitoring of energy usage** post upgrade to identify anomalies where the site's energy performance is out of line with expectations

## Critical Perspective

- ***Lack of evidence that 80% rule ensures participants are saving more than they pay post upgrade***
  - Paying more than you save is not always an indication that the upgrade failed. People are free to add load.
  - Investigations would have to tease out what is equipment failure vs behavior
- ***Disconnection authority remains a risk for most vulnerable customers***
  - Until utilities change the way they secure cost recovery, this won't change
- ***Successor customers may have a lower usage profile, causing tariffed charge to exceed savings***
  - Customers are notified of tariffed charge and upgrades prior to purchase or lease
  - Ignores health, safety, and comfort benefits as well as protection from increasingly common high bills during extreme weather events
- ***PAYS sounds too much like PACE, which was riddled with poor consumer protections, leading to a negative association***
  - So call it “Pay As You Save<sup>®</sup>” or inclusive utility investment

SELC response to NCLC Memo. <https://southernenvironment.sharefile.com/d-s347c47c8e80c4ebc91d7485d9629973c>

# All MO Investor Owned Utilities have Active or Approved PAYS® Programs

## At present only Investor Owned Utilities (IOUs) in Missouri offer PAYS programs

- Ameren PAYS® (Active, Permanent, Co-delivered, \$10M)
- Evergy PAYS® (Active, Pilot, Co-delivered, \$ 7M)
- Spire PAYS® (Active, Permanent, Co-delivered, \$17M)
- Liberty PAYS® (Approved, Pilot, not yet contracted, \$0.5M)

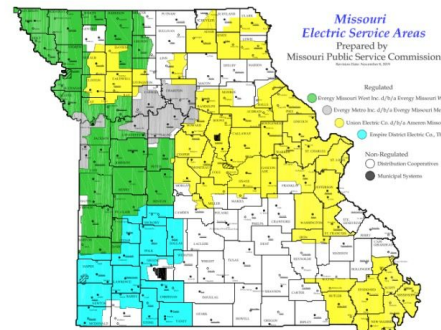
\*EETility is currently the Program Operator for all contracted programs facilitating co-delivery

IOUs serve approximately 2 million Missouri households (80%)

Missouri's 47 rural electric cooperatives serve ~860,000 customers.

Missouri's more than 100 municipal utilities serve ~640,000 households.

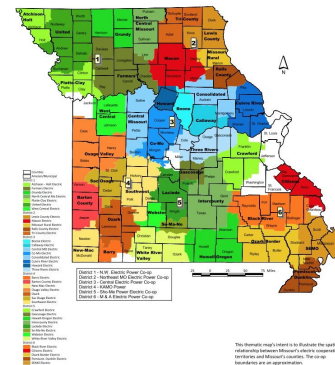
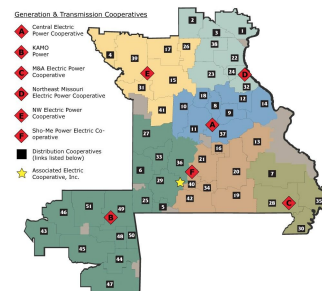
A large number of Missouri households are served by a combination of public and private utilities and approximately 500K do not receive either electric or gas service from an investor owned utility



DISCLAIMER: This map is provided by the Missouri Public Service Commission for informational purposes only, and should not be relied on for actual locations.

Figure 1: Current Missouri electric service areas courtesy of the Missouri Public Service Commission. Copy available at: <https://psc.mo.gov/CMSInternetData/Electric/Missouri%20Electric%20Service%20Map%2011-8-19.pdf>

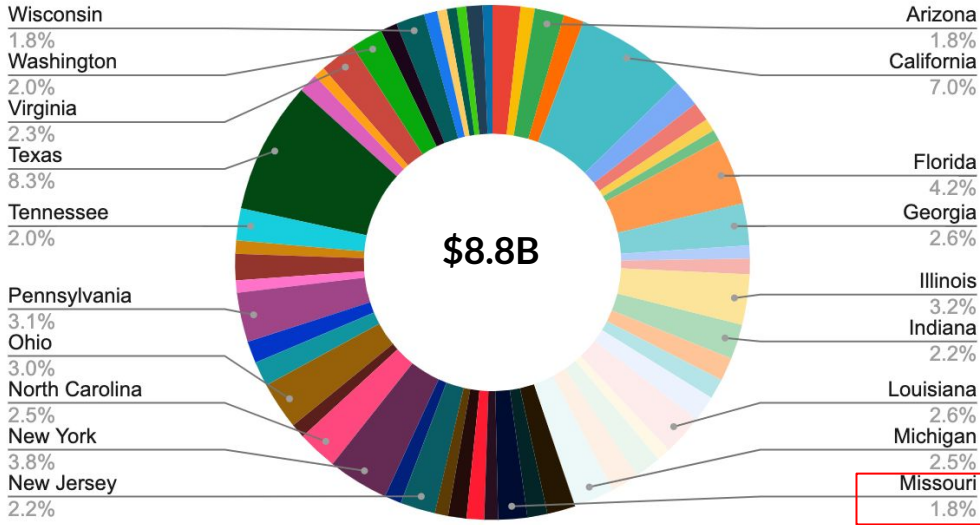
## Missouri Rural Electric Cooperative Service Territories





# Missouri is getting a significant chunk of IRA Rebate Funds

Home Energy Performance-Based, Whole-House Rebate Allocations and High Efficiency Electric Home Rebate Allocations



	Home Electric Appliance Rebates	Home Efficiency Rebates	Total
Missouri Allocation	\$75,807,060	\$75,366,640	\$151,173,700
Rebate Funds After Admin (80%)	\$60,645,648	\$60,293,312	<b>\$120,938,960</b>